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Naval Studies Group

CENTER FOR NAVAL ANALYSES

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WESTERN EUROPEAN AND NATO NAVIES, 1981

The first paper in this series (CNA Professional Paper 316) surveyed the history of the navies of Western Europe and Canada from the creation of NATO to the end of 1980, with emphasis on the evolution of their force structures. This paper will examine the current force procurement plans of each navy as of the end of 1981, to the extent that they have been made public, and estimate their impact on future force structure. One theme is common to nearly all of these programs: They are replacement programs designed to maintain current force levels while upgrading technology, not to increase the size of the fleet or change its basic structure. This is not surprising; the previous paper showed that this has been the case in most of these navies for the entire period of NATO's existence. The countries will be surveyed alphabetically, ending with the United Kingdom, whose navy has had a more traumatic year than most. Note that Finland has been added to this discussion.

Belgium

Aside from the four frigates of the Wielingen class, all of the combatants in the Belgian Navy are mine warfare ships. Today, this force consists of seven ocean minesweepers, six coastal minesweepers (all in "special reserve"), and 14 inshore minesweepers; all of which date



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from the 1950s. For some years Belgium has planned to replace these ships by participating in the Tripartite mine-hunter program with France and the Netherlands. After many delays and the collapse of the original consortium, a contract was signed in February 1981 with Beliard that provides for delivery of 10 Tripartite minehunters prior to 1990. The hulls are to be built at Ostend, and the ships are to be fitted out at Antwerp.

Canada

In mid-1981 the major combatants of Canada's Maritime Command were 20 destroyers and frigates (excluding three in Category C reserve) and three submarines. Canadian plans call for maintaining a force of 20 frigates indefinitely, and programs are in hand to build new ships and to extend the life of the older ships until the new ones enter service.

The Canadian patrol frigate (CPF) program entered the final contract definition phase in December 1980 when two teams of firms were selected to develop competitive designs to meet the navy's specifications. The team led by the Saint John Shipbuilding and Drydock Company is developing a design loosely based on the U.S. Oliver Hazard Perry (FFG-7)-class while the team led by Pratt and Whitney of Canada is producing a design loosely based on the Dutch Kortenaer class. This phase was to last roughly a year, and the winner will be selected and

awarded a contract to build six ships. The first ship will probably be delivered in 1987 and the sixth in 1991.

In March 1981, a study by the Department of National Defence addressed the question of the characteristics of the remaining 14 ships needed to replace the 20 now in service. It rejected a proposal to build small, inexpensive ships suitable mainly for peacetime patrol duties and decided that the ships would have to be more than 3,000 tons to have the seakeeping and military capabilities needed to meet Canada's requirements. This is roughly the size of the competing CPF designs.

In the meantime, the destroyer life extension (DELEX) program is being applied to the 16 frigates built in the late 1950s and early 1960s that are still in service. The six surviving St. Laurent-class ships are receiving relatively austere overhauls. The four Mackenzie-class frigates will, in addition, receive new hull sonars and communications equipment, while the four modified Restigouche- and the two Annapolis-class ships will receive basic overhauls and new electronics countermeasures, communications, fire control equipment, air search radars, and, in the Annapolis units, hull sonars. The extension of service life varies according to the extent of the overhaul, ranging from the late 1980s for the St. Laurent class to the late 1990s for the Annapolis class. There is no plan for mid-life modernizations of the more recent Iroquois-class ships. But the Huron of this class test-

fired the NATO vertical-launch Seasparrow point defense surface-to-air missile in February 1981, and it is possible that this system will be fitted to all the ships of this class as well as the new CPF.

The lives of Canada's three Oberon-class submarines are currently being extended by the submarine operational update (SOUP) program, which will give them new fire controls, sonars, and communications equipment. These overhauls will be completed between 1982 and 1986. Canada's maritime patrol aircraft force has been updated by the replacement of the old Argus with 18 new Aurora variants of the U.S. P-3.

Denmark

At the beginning of 1981, the combatant forces of the Danish Navy consisted of two large frigates, two light frigates, 16 fast attack craft, six coastal submarines, and eight coastal minesweepers. The navy's intention is to maintain its forces at these levels, although a few small ships are being lost because of budget constraints. The light frigate replacement program is nearly complete: two of the three ships of the new Niels Juel class are in commission and the four old Tritons are now out of service. Current plans provide for replacing or modernizing the other older classes in the fleet. The navy plans to retire the four submarines of the Delfinen class by 1985, when it hopes to have the lead unit of a new class in service. Two more of the new

class will be added in 1987-88 which, when added to the two relatively new ships of the Narhvalen class, will give a new force level of five. The design for the new class has not been selected, although it will probably be a German or Swedish design slightly larger than the 595-ton Delfinen. (The design under joint development by Germany and Norway is a prime candidate.) The current budget provides for modernizing four of the six Soloven-class fast attack craft and six of the navy's eight coastal minesweepers; the other ships of these classes are being decommissioned without replacement.

Finland

The Finnish Navy is limited by treaty to 10,000 tons of ships and 4,500 men, but it is actually well below these figures. Budget constraints forced the navy in 1980 to renounce its plan to build up to an 8,000-ton fleet by 1983, and, as a result, plans to build additional corvettes and minesweepers have been abandoned. (The navy currently has two corvettes of the Turunmaa class and six Kuha-class inshore minesweepers.) The navy's mine warfare capability was increased by the completion of the new minelayer and training ship Pohjanmaa and the conversion of the "Riga"-class frigate Hameenmaa to a minelayer. (Finland's other "Riga", Uusimaa, has been deleted.) Finland's main effort, however, appears to be directed toward building up its force of fast attack craft which currently consists of four "Styx" missile-equipped "Osa-II"-class missile boats and the similarly armed 15-knot

Isku. On 1 September 1981 the the 250-ton prototype of the "Patrol Boat-80" design, Helsinki, was delivered by Wartsila to the navy for fitting out. Initial plans are to build eight units of this class, which is intended to carry antiship missiles of an as yet unannounced type. Six of the 11 small Nuoli-class patrol boats are to be modernized, while the remainder will be disposed of.

France

The installation of the new French government in 1981 has created something of a hiatus in French defense planning, although public statements so far suggest that there will ultimately be little change in French doctrine or procurement programs compared with those adopted or planned by the previous government. France was expected to develop a new five-year military equipment plan this year to follow the 1976-81 plan, but the previous plan (particularly the portions relevant to the Army and Air Force) was substantially in arrears, and the new government decided to use the period 1982-83 to complete the 1976-81 plan and then develop a regular five-year plan for the period 1984-88. The 1982 and 1983 budgets will therefore be interim ones with three objectives: maintain the tempo of operations and training of French forces, complete the 1976-81 procurement plan, and continue research and development in a way that will keep open all of the major options being considered for the future, which for the navy include additional nuclear-powered ballistic missile submarines and new carriers.

The Navy's budget for 1982 includes all of the combatant ships which, according to previous plans, were to be begun during the year. These are one Rubis-class nuclear attack submarine (the fifth and last of the class under current plans), two Georges Leygues-class ASW frigates (the 7th and 8th of the class), two Eridan-class Tripartite minehunters (numbers 9 and 10), and the second group of two fast patrol craft of the new Super-Patra class. In addition, three ships are to be built for coast guard duties, and one hydrographic ship is to be constructed. The budget provides for commissioning the following ships in 1982: France's first SSN (Rubis), one ASW frigate (Montcalm), four light frigates of the D'Estienne d'Orves class, three minesweepers, one replenishment ship, one coast guard ship, and four auxiliaries. The navy will take delivery of 11 Super Etendard shipboard fighters and seven Xingu land-based maritime patrol aircraft. If previous plans continue to be adhered to, the 1983 budget will include the first two antiaircraft frigates of the "C-70AA-Type," the 11th Eridan, and the last four Super-Patra class patrol craft.

One of the navy's most noteworthy achievements in 1981 was the launching on 1 September of its second nuclear attack submarine, Saphir. The French SSN is the smallest SSN in the world, except for USS Tullibee (SSN-597), and is designed primarily for use against surface ships, not submarines. (The presence of one or more of these ships could be a potent deterrent in a regional crisis.)

The new government has already announced one decision involving long-term navy plans: it has stated that it intends to build a seventh SSBN. This ship is to be laid down in 1989, four years after the SSBN now under construction, L'Inflexible, is to be completed. Funds for the new SSBN, which is to enter service in 1994, are in the 1982 research and development budget. She will be different from preceding French SSBNs and carry a new ballistic missile, the M5. The previous government had hinted that it was considering building one or two additional SSBNs, so the new announcement does not reflect a radical change in policy, although it had originally been intended that the seventh ship would be completed in 1989 in order to achieve a goal of keeping three SSBNs on station at all times.

In September 1980, the Defense Council, presided over by then-president Giscard d'Estaing, resolved France's aircraft carrier debate by deciding to build two nuclear-powered carriers in the 32,000 to 35,000 ton range to replace the existing two carriers in the 1990s. These ships, which will carry conventional takeoff and landing aircraft, were chosen in preference to three smaller ships carrying V/STOL aircraft. The first is to be laid down at Brest in 1985, and the names Bretgne and Provence, originally assigned to the Rubis-class SSN, appear to be reserved for them. There are no indications that the current government plans to reverse the carrier decision. The main threat to this program appears to be the various strategic nuclear programs that

France will have to undertake in the next years to update its deterrent. These may force France to make some hard choices between strategic and general-purpose forces.

Federal Republic of Germany

The most important current replacement program in the West German navy is the "Type-122" frigate, the first ship of which, Bremen, began trials in May 1981. Initially, it was planned to build 12 ships of this class to replace the six "Z"-class destroyers and the six Koln-class frigates, and the first six were ordered in 1976. Since then the has retained hopes of building two more of the class (although the Defense Ministry has not approved these plans), but procurement of the remaining four has to be postponed until the 1990s when a new NATO design, now under study, might be adopted. To fill the gap the four Hamburg-class destroyers will be modernized again and the Koln-class frigates will be retained, renamed as necessary, and converted to act as 200-nautical-mile economic zone patrol vessels, probably by removing their seldom-used gas turbine engines and their ASW ordnance.

With the exception of the 10 "Type-143A" fast attack craft (which will replace the 10 old Zobel-class torpedo boats), German replacement programs for other ship types have not to date led to any new orders. The new submarine design, "Type-210," is still under study. In order to counter improving ASW techniques, the navy wants to adopt a propulsion

system that does not rely on a supply of air from the atmosphere. The most promising option at the moment appears to be fuel cells. For the mine warfare force, three designs are under study: "Type-332" (a replacement for the modernized Lindau-class MHC), "Type 343" (a replacement for the Schutze-class MSI), and "Type-355," a project to develop a pressure-mine disposal ship. Plans are eventually to build 10 "Type-343" (now delayed until the late 1980s) and 20 "Type-332," but the existing classes will, for the most part, have to serve into the 1990s. In the meantime, the 18 series-production Seehund drones for the "Troika" minehunting system are being delivered and six Lindau-class MSC have been modified to control them.

German naval air is benefiting from a program that will update 15 of its 20 Breguet Atlantic maritime patrol aircraft by 1983 and from the introduction of the Tornado fighter-bomber, which is replacing the F-104 Starfighter. The navy also plans to retrofit its Sea King search-and-rescue helicopters with antisurface missiles and an over-the-horizon targeting capability.

Greece

In the 1970s, the Greek navy concentrated on building up its force of fast attack craft and submarines. These programs are now complete or nearing completion: the last of eight "Type-209" submarines ordered in Germany was delivered in 1980; and the six "Combattante-III"-class fast

attack craft built in Greece had been launched by October 1981. During the early 1980s, it appears that the emphasis in Greek naval procurement will be on its destroyer and frigate force. For the long term, the most important program now is the "Standard" frigate program. Greece purchased the Dutch Pieter Florisz in September 1980 and her sister Witte de With in July 1981; these ships, renamed Elli and Limnos respectively, were fitting out when purchased. The Elli was commissioned on 10 October 1981, and the Limnos is scheduled to enter service in 1982. Greece also has an option to build a third ship of this class in Greece. Greece has also been actively adding to its collection of World War II-vintage U.S. destroyers. It has or is to acquire as many as four of the German Fletcher-class destroyers, although only the Nearchos (ex Z-3) had been commissioned at the time of writing. (She replaced the Thyella, which was deleted in February 1981.) In 1980 and 1981, Greece acquired from the U.S. four FRAM-I destroyers of which two, Kriezis (ex-Corry, DD-817) and Apostolis (ex-Miles C. Fox, DD-829) have been commissioned. Greece now has 13 old U.S. destroyers in commission (along with four equally old and unmodernized destroyer escorts), the youngest of which is 35 years old. No plans have been announced for replacing the ships of the minesweeping and amphibious forces.

Italy

The Italian navy is in the process of executing a navy law which provided funds for modernization of the fleet during 1975-1984. The strength of the navy at the beginning of 1981 and its strength after completion of the construction now in progress are provided in table 1. The fleet in the mid-1980s will be smaller in number but will have been significantly rejuvenated. While in 1981 the navy had only 10 ships less than 10 years of age, in the mid-1980s it will have 25. Of the ships to be deleted, three (Impetuoso, Castore, and Rizzo) were decommissioned or put in reserve status in 1980, and most of the remainder will be deleted in 1982 and 1983.

Recent actions have augmented the Italian naval procurement plans somewhat. In the late 1970s, the navy had been forced to defer 11 ships of the navy law because of fiscal problems. The law, however, was then updated, permitting two of the deferred ships, the seventh and eighth frigates of the Maestrale class, to be ordered in October 1980. This year the navy plans to order two more of the deferred ships, the missile destroyers of the Super Audace class, to replace the Impetuoso class. Finally, the navy included in its ordinary budget for 1981 the fifth and sixth submarines of the Sauro class, which had not been in the navy law. The ships called for in the navy law for which funds are still not available are six minehunters of the Lerici class and one amphibious transport dock (LPD). The LPD is also to double as a training ship,

replacing the cruiser Caio Duilio which was modified in 1980 to replace the previous training ship, San Giorgio.

TABLE 1

ITALIAN NAVY STATUS, 1981 AND 1985-86

<u>Type and class</u> <u>Ships:</u>		<u>Number</u>		<u>Standard</u> <u>Tonnage</u>	
		<u>1981</u>	<u>1985-86</u>	<u>1981</u>	<u>1985-86</u>
CVH	Garibaldi	0	1	0	10,000
SS	Sauro	2	4/6	2,900	5,800 or 8,700
	Toti	4	4	2,140	2,140
	Ex-American	2	0	4,200	0
CG	Vittorio Veneto	1	1	7,500	7,500
	Andrea Doria	2	2	13,000	13,000
DDG	Improved Audace	0	2	0	9,000
	Audace	2	2	7,200	7,200
	Impavido	2	2	6,400	6,400
DD	Impetuoso	1	0	2,775	0
FF	Maestrale	0	8	0	14,300
	Lupo	4	4	8,800	8,800
	Alpino	2	2	4,000	4,000
	Canopo	3	0	5,400	0
	Bergamini	3	0	4,200	0
FFL	Todaro	4	4	3,400	3,400
	Albatros	4	0	3,200	0
PG	Lampo	2	0	340	0
	Freccia	2	2	376	376
PHM	Sparviero/Nibbio	4	7	258	452
MSO	Agile	4	0	2,660	0
MSC	Adjutant	25	10	9,375	3,750
MHC	Lerici	0	4-10	0	1,880-4,700
MSI	Aragosta	5	0	600	0
LST	Ex-American	2	0	8,300	0
AOR	Stromboli	2	2	7,600	7,600
Total Ships		82	61-69	104,624	115,598-121,318

Aircraft:

VP	Atlantic	18	18
VS	S-2F Tracker	8	0
Helo	AB-204	24	0
	AB-212	23	27
	SH-3D	24	54

Netherlands

The Netherlands Fleet Plan calls for a force of 25 frigates, 6 diesel submarines, 15 minehunters, 16 inshore minesweepers, 21 long-range maritime patrol aircraft, and 40 Lynx helicopters. Current programs exist for the construction of 12 Kortenaer- class frigates, 2 Walrus-class submarines (with two more to follow in about two years), and 15 Tripartite minehunters; and the modernization of 6 Leander-class frigates. Aircraft programs in progress will provide 13 P-3C Update II long-range maritime patrol aircraft (the first of which was delivered in November 1981) and 24 Lynx helicopters (with more to be ordered). These programs, when combined with modern units already in hand (two missile frigates of the Tromp class, two submarines of the Zwaardvis class, and six Atlantic maritime patrol aircraft), will provide most of the forces in the plan.

Until recently, the frigate force in the plan consisted of 3 anti-air warfare (AAW) frigates (2 Tromp class and a 13th Kortenaer with AAW missiles), 18 large ASW frigates of the Kortenaer and rebuilt Leander classes, and 4 smaller ASW frigates of the proposed "M" class. In 1981 the planned composition of this force was changed, although the total number, 25, remains the same. Construction of the Kortenaer class proceeded so rapidly that the sixth and seventh ships off the assembly line were sold to Greece, one in September 1980 and one in July 1981. Two additional ships of the class were ordered to replace them, and the navy decided that, in view of the increased air and missile threat in the

Eastern Atlantic, Channel, and North Sea areas, these ships would be fitted as air defense ships with U.S. Standard-MR (Tartar) missiles. The originally planned 13th Kortenaer will now not be built, and instead a fifth "M"-class frigate has been added to the program. As a result, the planned composition of the Dutch frigate force is now two Tromps, 10 Kortenaers (ASW variant), two Kortenaers (AAW variant), 6 rebuilt Leanders and 5 "Ms".

The "M"-class frigates are the main element in the Dutch program that has not yet been funded, and there is no indication when they will materialize. Because of the loss of three of its original nine Atlantics, the Netherlands also wants to acquire three more maritime patrol aircraft. A decision will have to be made in 1982 if three more aircraft are to be added to the current P-3C order, although it is not clear that funds can be found to do this, particularly since a proposed interruption in U.S. Navy P-3C procurement would drive up the unit cost of export aircraft. No decision has yet been taken on replacements for the 16 aging inshore minesweepers. Finally, disposals of old ships have anticipated deliveries of new ones: 11 of the navy's 12 old destroyers had been disposed of at a time when only five of the Kortenaer-class had entered service. Nonetheless, the Dutch program is a remarkable effort which is well on its way to giving the Netherlands a fleet that is both sizeable and modern.

Norway

Norway's naval procurement effort is focused primarily on its fast attack craft and submarines; while the navy's combatant forces also include five frigates and 10 old coastal minesweepers, for which no retirement plans have been announced. Deliveries of the 14 fast attack craft of the Hauk class were completed in 1980, replacing the Nasty-class motor torpedo boats of the early 1960s. Norway is proceeding with plans to build eight submarines in Germany to replace all or part of the Type-207" class, but, as it will probably purchase the same design as does Germany, the debate over the type of propulsion system to use in these ships may delay the program. It is worth noting that the newly created Norwegian Coast Guard has received three new cutters of the Nordkapp class that could be formidable frigates in wartime.

Portugal

The principal combatants of the Portuguese Navy in 1981 were seven frigates, 10 light frigates, and three submarines. In September 1980, a contract was signed for the construction of one Dutch Kortenaer-class frigates at De Schelde and two in Portugal, to be delivered in 1985, 1987, and 1989 to replace Portugal's three Dealey-class frigates. This program depends on receipt of NATO financial assistance, details of which had not yet been worked out as of the beginning of 1982. No plans had been announced for replacing or upgrading the navy's other combatants.

In recent years, Portugal has become increasingly concerned with the defenses of the exclusive economic zone (EEZ) around its metropolitan territory and its Atlantic islands. Incidents like the attack on a Portuguese fishing boat by Polisario guerrillas off the Sahara in September 1981 have heightened this concern. Portugal cannot rely on NATO aid for this mission, since it is a national one and not an alliance one. On the other hand, it can be performed by relatively unsophisticated, inexpensive ships. Therefore, the navy is developing plans to build in Portuguese yards Portuguese-funded ships designed for surveillance and rescue duties in the EEZ. The air force will contribute helicopters for the same purpose.

Spain

Spain has demonstrated the same concern for its EEZ as has Portugal, and Spain's problem is increased by the proximity of the Canary Islands to the contested Sahara. Spain has assigned to EEZ patrol duties some of its older combatants, including the frigate V.Y. Pinzon, the four surviving light frigates of the Atrevida class, and six minesweepers, and is building a large number of patrol craft, including 10 units of the 296-ton Anaga class. The latter were designed to replace the six Lazaga-class fast attack craft for duty with the fleet.

The remainder of Spain's combatant fleet consists of 1 light carrier, 13 destroyers, 6 frigates, 4 light frigates, 8 submarines, and 9

minesweepers. Progress is being made in a number of new-construction programs to modernize this force. The new light carrier, named Canarias, was 14 % complete in early 1981. (On the other hand, three U.S. Oliver Hazard Perry (FFG-7) class frigates have been temporarily deferred to allow the yard to concentrate on the carrier; plans are to deliver the first frigate at the same time as the carriers.) The four Agosta-class submarines under construction at Cartagena have finally received names and the first one may be approaching delivery. Delivery of the second group of four Descubierta-class light frigates began in 1981. Spain has requested authority to buy 18 SH-60B LAMPS III helicopters in the United States for the new carrier, which will also operate V/STOL aircraft (either AV-8A Matador or AV-8B).

Spain has an ambitious follow-on program for the period 1983-1990. At the end of this period, it plans to have two carrier task groups (each with a carrier, a cruiser, and four missile frigates) and four escort groups (each with two missile frigates and two regular frigates). It will, therefore, need to build a second carrier, two cruisers, eight missile frigates, and other ships including two Tripartite minesweepers, in addition to more aircraft. The Bazan firm has also developed plans for an improved Descubierta-class frigate with helicopter capability and increased speed, and the navy would like to build four of these. The fate of all of these plans is uncertain.

On 29 October 1981, the Spanish Congress of Deputies authorized the government to negotiate for Spanish entry into NATO. Spain's Minister of Defense has stated that, while the other services would need some preparation for NATO membership, the navy could enter it "tomorrow." This is the result, in part, of the good bilateral relationships between Spain and individual NATO countries (particularly the United States) which have led, among other things, to the Spanish navy participating in exercises with the navies of its prospective allies.

Sweden

The Swedish Navy is continuing the process of disposing of its large surface ships in favor of submarines, fast patrol craft, and minecraft. Of its three remaining destroyers, the Halland was in use as a training ship in 1981, the Smaland was in reserve, and the Halsingland, also in reserve, is to be disposed of in 1982. The navy's familiar training ship Alvsnabben has been replaced by the new minelayer Karlskrona, which was commissioned 16 December 1981.

On the other hand, procurement of three new classes was begun in 1981. The first submarine of the new "A-17" class (an improved Nacken) has been funded and should be complete by 1986. Five more units of this class are to be built to replace the Draken class. In the meantime, four Draken-class submarines are to have their electronics and armament upgraded for service in the 1980s. (The other two, Draken and Gripen,

were deleted in 1981.) The result of the "A-17" program is that Sweden will have 13 submarines in 1990 compared with 12 at the end of 1981.

The second new class begun in 1981 was the "YA-81" class fast attack craft, two of which were ordered from Karlskrona for delivery in 1985-86. Sweden's plans for its fast attack craft have been restructured around the Saab RBS-15 surface-to-surface missile, which was selected in preference to Harpoon, at the expense of a two-year delay in availability (1985 instead of 1983). The new "YA-81" class is basically an improved Spica-II that carries eight RBS-15s; it will also have an ASW capability. The navy also plans to backfit the RBS-15 to the earlier Spica-class boats: eight for each Spica-II and four for each Spica-I, in lieu of their torpedo tubes. In addition, the smaller Hugin class, the last boats of which were completed in 1981, will eventually receive the RBS-15. The Norwegian-built Hugins replaced the "T-42"-class motor torpedo boats, which in turn are being converted into coastal patrol craft: four have already been converted and four are being converted.

The third new class begun in 1981 was the long-deferred glass-reinforced plastic (GRP) minehunter of the "M-80" (formerly "M-70") class, two of which were ordered from Karlskrona for delivery in 1984. The GRP mold for this class has already been used to build two cutters for the coast guard. The old minesweeping force is rapidly dwindling: of the steel-hulled Hano class, four were converted in 1979 to patrol craft and

the other two were deleted, while two of the 12 wooden-hulled minesweepers of the Arko class were also deleted in 1981.

In 1981 the navy operated about 25 helicopters, and this force is to be updated and given modern antisubmarine torpedoes. The air force provides 24 Viggen aircraft for maritime reconnaissance and attack missions.

On 27 October 1981, a Soviet "Whiskey"-class submarine ran aground well inside Swedish territorial waters and suspiciously close to the Karlskrona naval base. This was the most dramatic of a long series of incidents involving suspected foreign submarines inside Swedish territorial waters (which were extended from 4 to 12 nautical miles in 1979). The Swedes are deadly serious about the defense of their coastal waters, and on several occasions they have expended ordnance on submarine contacts--recent cases include attacks made by the destroyer Halland in October 1980 and by a helicopter in May 1981. The Whiskey incident made it clear for all to see that, not only were incursions actually taking place, but at least some of them were deliberate espionage missions. As a direct consequence the government's Defense Commission requested in November 1981 a substantial increase for coast defense for the period 1982-87, to be used for helicopters, patrol boats (including the "T-42"-class conversions) and shore-based surveillance.

Turkey

The Turkish navy has a substantial number of ships in each of four categories of combatants: destroyers/frigates (17), fast attack craft (23), submarines (15), and coastal minesweepers (22). Its other forces include a large number of amphibious warfare units, most of which are relatively small.

The destroyer force consists entirely of U.S. ships dating from World War II, and no building program has been announced to replace them. Instead, Turkey continues to acquire more of these ships, including two in 1980, one in 1981, and one in February 1982, with another scheduled for later in the year. Turkey also has 11 old U.S. submarines (including the former Tang, transferred in 1980), but it also has a building program in a Turkish yard for modern submarines of the German "Type-209." The first Turkish-built ship of this type, Yildiray, was commissioned in July 1981 and the second, Titiray, is under construction. Turkey has also built or is building in its own yards German-designed fast attack craft of two types, four "FPB-57s" for the navy and 13 "SAR-33s" for the gendarmerie. Most of its landing craft are also domestically produced. Notable in their absence are announced plans for construction of frigates and mine warfare ships.

United Kingdom

The Royal Navy entered 1981 with a program that appeared to offer a reasonably good chance of allowing the fleet to continue to fulfill two important responsibilities: providing the bulk of NATO ASW naval forces in the eastern Atlantic, and providing Great Britain's strategic deterrent. Britain's surface ASW forces were to consist of task forces of destroyers and frigates centered around the three ASW carriers of the Invincible class. Programs in progress included the "Type-42" destroyer and the "Type-22" frigate, both of which were scheduled to remain in production indefinitely, and the mid-life modernization of the Leander-class frigates, about 60 % of which had been completed. The navy also had programs in progress for the construction of ASW nuclear submarines and the Hunt-class minehunters.

There were signs of trouble with this program. There were significant cost overruns in all classes at a time when the British economy was entering a period of prolonged crisis. There were no orders for new major surface combatants under the 1980-81 estimates. There was, however, in July 1980 a decision to build four (or possibly five) new SSBNs carrying Trident missiles to replace the existing Polaris force. The showdown between economic imperatives, the existing program for general-purpose forces, and the new British strategic force decision, came in 1981.

In January 1981, the new Defence Secretary, John Nott, announced that, while the major decisions remained to be made, he had already decided to dispose of the carrier Bulwark, the cruiser Blake, and all the frigates of the "Tribal" class. In April, the "Defence White Paper" accompanying the 1981-82 estimates appeared, and in it Nott stated some of the premises that would guide his decisions. He believed that too much money was being invested in platforms (particularly in overhauls of older ships and aircraft) and not enough in the weapons and sensors that gave them their combat-effectiveness. In addition, he believed there had been too many cuts in ammunition, fuel, and spare parts (in other words, readiness). The paper made no announcements concerning new procurement because a "Major Defence Review" had been begun to reevaluate the future plans of all the services.

The 25 June publication of the results of the "Defence Review" showed that, while overall British defense spending was to meet the NATO target of 3% real annual growth, the general-purpose navy was to take most of the cuts needed to allow the other services and the Trident program to meet their commitments. The carrier, destroyer, and frigate programs were particularly hard hit.

The reason for these decisions appears to be that the analyses made as part of the "Defence Review" discredited the type of warfare which the navy's surface ships were designed to fight. Nott's statements suggest that he believes that the most cost-effective way of conducting ASW in the

eastern Atlantic and the Channel is with maritime patrol aircraft (MPAs) and submarines, not carriers and frigates. It appears that Nott may decide not to use the Invincible-class ASW carriers for ASW at all--the only mission he has mentioned for them recently is supporting U.S. efforts to show the flag outside the NATO area. In the meantime, the main role of frigates in the future may be to deploy towed-array sensors. The only new surface combatant mentioned in the review is the new "Type-23" frigate, an austere ship with little payload besides a towed array and a helicopter. The design of this ship is still under discussion--efforts are being made to reduce it from 3000 to 2000 tons--and there will be no orders until the mid-1980s.

For the existing carrier and frigate classes, the future is bleak. The number of ASW carriers in the Royal Navy will be two: Hermes will be retired when the Illustrious is commissioned in 1983, and one ship of the Invincible class will be disposed of (possibly to Australia) by 1984 when the Ark Royal is completed. The "Defence Review" calls for reducing the force of destroyers and frigates from the present 59 to "about" 50, but eight of these will be in the ready reserve. Mid-life modernizations will no longer be done, and ships that were to have received them will be retired early instead. At the end of 1983, the force will be near its planned level: it will contain one Bristol, two "County"-class, and 11 "Type-42" destroyers; and four "Type-22," eight "Type-21," 21 Leander-class, and four Rothsay-class frigates for a total of 51 destroyers and frigates.

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Glasser, Kenneth S., "The d-Choice Secretary Problem," 32 pp., Jun 1979, AD A075 225
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PP 350

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PP 351

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PP 353

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PP 354

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